May 28, 2020

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Comments On Preliminary Cost Category Schedule
***Ex Parte* Letter, WT Docket No. 18-122**

Dear Ms. Dortch:

The Boeing Company ("Boeing") herein briefly responds to the comments that were filed by Eutelsat S.A. addressing the cost estimates for new C-band satellites that were included in the *3.7 GHz Transition Preliminary Cost Category Schedule Of Potential Expenses and Estimated Costs* ("Catalog").[1]

Boeing holds Eutelsat in high esteem as a major global satellite network operator. Boeing also agrees with Eutelsat that the Commission should limit reimbursement of relocation costs only to equipment that is necessary to facilitate the transition.[2] Eutelsat, however, appears to have misconstrued the basis for certain of the satellite manufacturing cost estimates that are included in the preliminary Catalog. Eutelsat suggested in its comments (and in a subsequent petition for reconsideration[3] of the *C-Band Order*[4]) that certain of the cost estimates are "far too high" and "could only be for satellites with large (and heavy) buses, with large arrays of transponders operating on multiple frequency bands over large, non-CONUS regions."[5]

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[1] *See* 3.7 GHz Transition Preliminary Cost Category Schedule Of Potential Expenses And Estimated Costs, § II (April 27, 2020) ("*Catalog*"); *included as an attachment to* Public Notice, *Wireless Telecommunications Bureau Seeks Comment On Preliminary Cost Category Schedule For 3.7-4.2 GHz Band*, DA 20-457 (April 27, 2020).

[2] Comments of Eutelsat S.A., GN Docket No. 18-122, at 1 (May 14, 2020) ("*Eutelsat Comments*").

[3] *See* Petition for Expedited Reconsideration or Clarification of Eutelsat S.A., GN Docket No. 18-122 (May 23, 2020) ("*Eutelsat Petition*").

[4] *See* Expanding Flexible Use of the 3.7 to 4.2 GHz Band, GN Docket No. 18-122, *Report and Order and Order of Proposed Modification*, FCC 20-22 (March 3, 2020) ("*C-Band Order*").

[5] *Eutelsat Comments* at 5.

In reality, the higher end costs that are included in the preliminary Catalog reflect legitimate variables that are both reasonable and appropriate to ensure that the C-band satellites that are necessary to the rebanding process are launched expeditiously and provide a correspondingly high level of reliability and assurance that they will be fully operational and available to timely support the clearing of the C-band frequencies. The preliminary Catalog acknowledges this fact, explaining that "[h]igh estimates assume a significantly accelerated build/launch timeline to offer satellite operators the ability to begin testing and verification of ground relocation equipment over the satellite in under 24 months and/or the potential to 'backstop' other satellite builds as a fail-safe to delays."[6] Achieving these objectives necessitates mission-specific design accommodations, inventory management, factory capacity balancing, and innovative partnerships with key suppliers, all of which result in justifiable expenditures to successfully accomplish the Commission's stated goal of rapidly clearing the band for use by 5G services.

The need for "a significantly accelerated build/launch timeline"[7] to support rebanding poses a unique challenge for the aerospace supply base, but it is one that American satellite and rocket manufacturers are well equipped to handle. The active involvement of multiple satellite manufacturers and launch providers will be required to support the C-band spectrum transition, requiring each manufacturer to provide the most appropriate product from its portfolio of offerings. There is no one-size-fits-all satellite as manufacturers typically endeavor to differentiate from one another in offering distinctive value propositions for the market. Thus, satellite platforms (size, weight, power, component quantities, reliability/redundancy, *etc.*) and indeed payload configurations will vary from one manufacturer to another and may be further influenced by existing inventory and parts availability.

Despite these variations in satellite offerings, Boeing understood when it was interviewed by RKF Engineering Solutions LLC ("RKF") during the development of the preliminary Catalog that the Catalog would address manufacturing costs solely for satellites that provide coverage of the continental United States ("CONUS") using the 4.0-4.2 GHz band. Boeing anticipates that other satellite manufacturers interviewed by RKF understood these guidelines as well. Therefore, absent actual evidence that certain cost estimates diverged from these requirements, the Commission should disregard suggestions to the contrary.

It is also unnecessary for the Commission to prohibit the use of hybrid satellites in the C-band clearing process by limiting eligibility for reimbursement to single-purpose satellites "that operate solely with a C-band payload and within CONUS."[8] As the Commission is aware, satellite launch and operating costs include certain fixed expenses that must be incurred regardless of whether a satellite hosts a single payload or multiple payloads, including the costs of launching

[6] *Catalog* at 2-3.

[7] *Id.* at 2.

[8] *Eutelsat Comments* at 6; *Eutelsat Petition* at 4-5.

the spacecraft and managing it in-orbit during its operational life. Although certain of these costs increase marginally for multi-payload satellites, it remains far more efficient and cost effective to launch and operate multi-payload rather than single payload satellites.

Further, the Commission already has in place a long standing policy regarding the reimbursement of equipment that includes multiple capabilities. As Eutelsat acknowledges,[9] the Commission explained in the *C-band Order* that

> if an incumbent builds additional functionalities into replacement equipment that are not needed to facilitate the swift transition of the band, it must reasonably allocate the incremental costs of such additional functionalities to itself and only seek reimbursement for the costs reasonably allocated to the needed relocation.[10]

The Commission's policy of permitting apportionment of incremental costs is far from new. The Commission has employed this same policy effectively in previous band clearing proceedings. For example, in the *Incentive Auction* proceeding, the Commission instructed that station operators "may elect to purchase optional equipment capability or make other upgrades at their own cost, but only the cost of the equipment without optional upgrades is a reimbursable expense."[11]

Despite this precedent, Eutelsat argues that apportioning costs for additional satellite functionalities should be prohibited, claiming it would be "tantamount to impossible" to allocate the costs appropriately.[12] Boeing, however, has substantial experience in manufacturing hybrid satellites with multiple payloads, including payloads used for separate missions and by different parties. In such cases, Boeing necessarily allocates the incremental costs of additional functionalities; satellite payloads are usually modular, making their costs easy to segregate using such standard factors as component quantity, size, weight and/or resource consumption.

Therefore, no justification exists for the Commission to withdraw its long standing and highly efficient policy of permitting incumbent licensees that are subject to relocation to purchase equipment with additional functionality at their own proportionate expense. Instead, the Commission should affirm that the range of satellite manufacturing cost information that is

[9] *See id.* at 5 (*quoting C-Band Order*, ¶ 194); *see also Eutelsat Petition* at 10 (quoting the same language).

[10] *C-Band Order*, ¶ 194.

[11] Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, GN Docket No. 12-268, *Report and Order*, FCC 14-50, ¶ 624 (June 2, 2014).

[12] *Eutelsat Comments* at 5; *see also Eutelsat Petition* at 11.

included in the preliminary Catalog is "presumptive reasonable" for purposes of reimbursement in the C-band spectrum clearing process.[13]

Thank you for your attention to this matter. Please contact the undersigned if you have any questions.

Sincerely,

/Audrey Allison/

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[13] *C-Band Order*, ¶ 210.